

INTERNATIONAL SEARCH REPORT

PCT/US2005/003942

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 F16L11/04 B32B1/08 B32B27/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 F16L B32B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------------|
| X | FR 2 766 548 A (HUTCHINSON) 29 January 1999 (1999-01-29) claims 1,5,6,8 page 1, line 3 - line 7 page 2, line 4 - line 16 page 2, line 33 - page 3, line 5 page 3, line 13 - line 29 page 4, line 29 - line 31 | 1-12,14, 20-23, 25-30 |
| Y | EP 1 355 098 A (NOBEL PLASTIQUES) 22 October 2003 (2003-10-22) claims 1,2,4-7 paragraphs '0001!, '0008!, '0009!, '0011! - '0018! | 13, 15-19,24 |
| X | | 1-12,14, 20-23, 25-30 |

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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Date of the actual completion of the International search

Date of mailing of the International search report

27 May 2005

08/06/2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|---|--|
| X | EP 1 362 692 A (MAGNETI MARELLI POWERTRAIN SPA) 19 November 2003 (2003-11-19) claims 1-5 paragraphs '0001!, '0002!, '0016!, '0018! _____ | 1-3, 6-12,14 |
| X | EP 0 470 605 A (EMS-INVENTA AG) 12 February 1992 (1992-02-12) claims 1,4,9,10,13 page 2, line 1 - line 12 page 3, line 1 - line 6 page 3, line 25 - line 29 _____ | 1-4,6, 10-12, 14, 20-23, 25-30 |
| Y | US 2002/090477 A1 (ITO HIROAKI ET AL) 11 July 2002 (2002-07-11) claims 1,9,13,16-18,20 _____ | 13, 15-19,24 |
| A | EP 1 022 132 A (TEIJIN LIMITED) 26 July 2000 (2000-07-26) claims 1,21 _____ | 1-30 |

INTERNATIONAL SEARCH REPORT

PCT/US2005/003942

| Patent document cited in search report | | Publication date | | Patent family member(s) | | Publication date |
|--|----|------------------|----|-------------------------|--|------------------|
| FR 2766548 | A | 29-01-1999 | FR | 2766548 A1 | | 29-01-1999 |
| EP 1355098 | A | 22-10-2003 | FR | 2838501 A1 | | 17-10-2003 |
| | | | BR | 0300879 A | | 17-08-2004 |
| | | | CA | 2424533 A1 | | 15-10-2003 |
| | | | EP | 1355098 A1 | | 22-10-2003 |
| | | | US | 2003192612 A1 | | 16-10-2003 |
| EP 1362692 | A | 19-11-2003 | IT | B020020304 A1 | | 17-11-2003 |
| | | | BR | 0301518 A | | 08-09-2004 |
| | | | EP | 1362692 A1 | | 19-11-2003 |
| | | | US | 2004065378 A1 | | 08-04-2004 |
| EP 0470605 | A | 12-02-1992 | DE | 4025300 C1 | | 20-02-1992 |
| | | | CA | 2048715 A1 | | 10-02-1992 |
| | | | EP | 0470605 A1 | | 12-02-1992 |
| | | | JP | 4248088 A | | 03-09-1992 |
| US 2002090477 | A1 | 11-07-2002 | JP | 2001179798 A | | 03-07-2001 |
| | | | EP | 1118808 A2 | | 25-07-2001 |
| | | | US | 2001031330 A1 | | 18-10-2001 |
| EP 1022132 | A | 26-07-2000 | DE | 69920393 D1 | | 28-10-2004 |
| | | | EP | 1022132 A1 | | 26-07-2000 |
| | | | US | 6376043 B1 | | 23-04-2002 |
| | | | WO | 0005070 A1 | | 03-02-2000 |
| | | | TW | 500662 B | | 01-09-2002 |